

REMARKS

The Examiner has rejected claims 1-6 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,765,858 to Hoeven in view of U.S. Patent 4,791,668 to Pringle. The Examiner has further rejected claims 8-11 under 35 U.S.C. 103(a) as being unpatentable over Hoeven in view of Pringle, and further in view of U.S. Patent 5,058,130 to Park

The Hoeven patent discloses an arrangement for reading an information carrier which includes a read head for scanning the information carrier, a signal processing unit for processing one or more electrical signals generated by the read head, electrical conductors for transferring the one or more electrical signals to the signal processing unit, and termination means (R1-R4 and C) for terminating the electrical conductors.

The Pringle patent discloses a detectable impedance line interface circuit for a.c. coupling a transmission line and a port of a telecommunication facility.

The subject invention, as claimed in claim 1, further includes the limitations "wherein the read head performs the scanning by transmitting a radiation beam to the information carrier and receiving a reflected radiation beam from the information carrier", "wherein the arrangement further comprises measuring means for measuring the reflectance of the radiation beam", and "wherein the controllable termination means selects an impedance dependent on the measured reflectance of the radiation beam".

The Examiner has indicated "Hoeven teaches utilizing a high impedance for data read at comparatively high data speeds in order to counteract reflectance of the radiation beam ([Hoeven] Column 1 Lines 25-33, "At high read speeds, for example 10 to 20xDVD, disturbing reflections may appear at the input of the signal processing unit, as a result of which the signals conveyed via the flexible cable are unreliable. The reflections can be counteracted by terminating the respective conductors of the flexible cable with a resistive impedance near the input of the signal processing unit"). Pringle teaches a circuit which can provide more than one terminating impedance to a given signal. It is desirable to use the proper impedance when reading data using different techniques, therefore it is obvious to have a means for selecting the proper impedance."

Applicant submits that the Examiner is mistaken. In particular, the reflections to which Hoeven is referring are electrical reflections at the inputs of the signal processing unit, due in part to high signal rates. This is particularly shown in Fig. 4 of Hoeven and described in the specification at col. 3, lines 1-30, where the inputs 8.1-8.7 of the signal processing unit 8 are connected to outputs of the read head 4 by electrical conductors 6.1-6.7, where electrical signal conductors 6.2, 6.3, 6.5 and 6.6 are connected via respective resistances R1-R4, and a common capacitive impedance C to a reference conductor 6.4. However, this is not related to the reflectance of a radiation beam being reflected from an optical record carrier.

As described in the subject specification on page 3, line 25 to page 4, line 11, the reflectance from different optical record carriers may differ, and this differing reflectance causes the optical detector to output different signal levels. To that end, the subject invention, as claimed, includes "measuring means for measuring the reflectance of the radiation beam", and "wherein the controllable termination means selects an impedance dependent on the measured reflectance of the radiation beam".

As described in the specification on page 6, lines 1-3, the optical detector output signals are a measure of the intensity of the radiation incident on the detector. As such, this may be used to determine the reflectance of the radiation beam being reflected from the optical record carrier.

While Hoeven arguably discloses means capable of measuring the reflectance of the radiation beam, there is no disclosure or suggestion in Hoeven that this reflectance is indeed measured, and that this reflectance of the radiation beam is related to the reading speed. What is related to the reading speed is the amount of (electrical) reflectance in the signal line, i.e., at higher signal rates (due to higher reading speed), there may occur reflectance of the signal in the signal lines leading to inaccuracies in the signal processing. This is described in the subject specification on page 1, line 25 to page 2, line 2.

However, the noted limitation in claim 1 refers to controlling the impedance based on the reflectance of the radiation

beam on the record carrier. This is described in the specification on page 3, line 25 to page 4, line 11.

The Park patent discloses a jitter equalizer for digital transmission filter, in which "an equalizer for equalizing an input data signal of a digital transmission filter for jitter, overshoot and under shoot in amplitude includes a delay circuit which delays an input non-return-to-zero (NRZ) data signal a specified number of bits by synchronizing the input data signal with a basic clock signal, and outputs a plurality of delayed data bit streams each corresponding to a respective delay element of the delay circuit." (Abstract).

Claim 8 includes the limitation "at least one electrical conductor is terminated with a selectable impedance which is selected by optimizing one or more parameters of the electrical signal conveyed by the at least one electrical conductor".

The Examiner now indicates "It would have been obvious to one of ordinary skill in the art to utilize Hoeven's arrangement for reading an information carrier with Pringle's selectable impedance line interface circuit and Park's digital filtering technique. Hoeven teaches utilizing a high impedance for data read at comparatively high data speeds and Pringle teaches a circuit which can provide more than one terminating impedance to a given signal. It is desirable to use the proper impedance when reading data using different techniques, therefore it is obvious to have a means for selecting the proper impedance."

Applicant submits that this does not make any sense. While Park discloses a jitter equalizer which reduces jitter, there is no suggestion as to what this has to do with selecting the appropriate impedance.

On the other hand, in the subject specification, on page 4, lines 14-19, and on page 8, lines 6-12, it is indicated that jitter, overshoot and amplitude of the signals applied to the signal processing circuit may be advantageously affected by the choice of the proper termination impedance.

In view of the above, Applicants believe that the subject invention, as claimed, is not rendered obvious by the prior art, either individually or collectively, and as such, is patentable thereover.

Applicants believe that this application, containing claims 1-6 and 8-11, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

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